

REMARKS

The applicant's attorney thanks the Examiner for acknowledging withdrawal of the prior grounds of rejection. Presently, claims 1-35 of the present application stand rejected on various new grounds. Reconsideration of the present application in view of the following comments is respectfully requested.

Claims 1-3, 5, 7, 10-13, 15, 18-21, 23-24, 26-29, and 32-35 stand rejected under 35 U.S.C. §102(a) as being anticipated by USPN 7123727 to Elko. This rejection is traversed. "[A]n invention is anticipated if the same device, including all the claim limitations, is shown in a single prior art reference. Every element of the claimed invention must be literally present, arranged as in the claim." Richardson v. Suzuki Motor Co. Ltd., 868 F.2d 1226, 1236, 9 USPQ2d 1913, 1920 (Fed. Cir. 1989). The claims must not be treated as "mere catalogs of separate parts, in disregard of the part-to-part relationships set forth in the claims and that give the claims their meaning." Lindemann Maschinenfabrik GMBH v. American Hoist and Derrick Company et al., 730 F.2d 1452, 1459, 221 USPQ 481, 486 (Fed. Cir. 1984). As a result, a reference that coincidentally lists features of a claim without describing the claimed arrangement, relationship, and organization of such features cannot anticipate.

In connection with independent claim 1, the Office Action asserts that Elko discloses "filtering data with an order statistics filter to provide an estimate of reverberation time" citing: abstract; Figs. 1 and 7; column 6, lines 5-16; column 6, line 55 to column 7, line 42. (Office Action p. 3, 3d ¶). A careful review of this reference fails to disclose directly or indirectly any type of order statistics filter -- let alone one that provides any type of reverberation time estimate. Indeed, it appears the Office Action may be confusing the

determination of a Time Delay of Arrival (TDOA) as used in Elko with reverberation time.

By way of nonlimiting example, the present application explains:

The RT [Reverberation Time] of a room specifies the duration for which a sound persists after it has been switched off, which is typically due to multiple reflections of sound from the various surfaces within the room. Historically, RT has been referred to as the T_{60} time--the time taken for sound to decay to 60 dB below its initial value at cessation.

(See, ¶ 0003 of the present application as Published under No. US 2004/0213415 A1).

Given such terms there broadest reasonable interpretation, estimating TDOA does not disclose, or otherwise teach/suggest, estimating reverberation time. To the contrary, Elko counsels that room reverberation be ignored, stating "[d]ue to the fact that the microphone array is used in a close-talking environment, room reverberation can be neglected and the ideal free-field model is used..." in regard to its TDOA scheme (Elko, column 5 lines 49-51) (emphasis added). Accordingly, it seems nonsensical to interpret Elko as disclosing reverberation time estimation when it teaches ignoring room reverberation altogether.

In regard to claim 5, the Office Action asserts this Elko citation again to contend it discloses "providing an estimate corresponding to reverberation time of the acoustic environment" (Office Action p. 4, 2d ¶), which flawed for the same reasons. Moreover, this citation is asserted to disclose "iteratively determining two or more values...where one of the values corresponds to a time-constant parameter and another of the values corresponds to a diffusive power parameter" (Office Action, ¶ bridging pp. 3 & 4), which are also missing.

The rationale asserted to reject the remaining independent claims 10, 18, 26, and 32 relates back to rationale asserted against claim 1 and/or 5. Accordingly at least the same reasons support patentability of these claims. Notwithstanding this claim grouping in the Office Action, it should be appreciated that each of the independent claims is directed to a Response to Office Action
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separately patentable invention that is deserving of allowance based on its own unique features relative to the art of record. The dependent claims rejected as being anticipated by Elko are patentable for at least the same reasons as their corresponding base claims. Moreover, there are additional reasons supporting patentability of many of them. Accordingly, it is respectfully submitted that the ground of rejection based on Elko should be withdrawn.

Claims 1-16, 18-24, 26-30, and 32-35 stand rejected under 35 U.S.C. §102(e) as being anticipated by USPN 7039199 to Rui. This rejection is traversed. Rui is directed to determining the location of a speaker based on sound. Much like Elko, it references TDOA as means to this end. With regard to independent claim 1, several figures and passages of Rui are asserted; however, this citation and the balance of Rui fails to disclose, teach, or suggest generating data with a maximum likelihood estimator and filtering that data with an order-statistic filter to provide an estimate of reverberation time. Indeed, at most Rui's focus on reverberation is to eliminate/reduce it as an error or "noise" source that interferes with its determination of speaker location -- not to estimate of from data with a filter. (See, Rui, column 2, lines 1-53; column 6, lines 2-16; and column 16, lines 4-21 -- for instance). In fact, Rui's references to reverberation appears to lack any disclosure of it in connection with a particular duration of time -- rather it is treated as noise parameter for function weighting. Moreover, assuming *arguendo* that the post filtering cited in column 21 includes reference to some form of order statistics filtering -- it is directed to filtering the speaker directional data sought by Rui -- not processing data to estimate a reverberation time.

The Office Action asserts the same Rui citation against independent claim 5 and likewise fails to establish "providing an estimate corresponding to reverberation time of the

acoustic environment" for at least the same reasons. Moreover, the Rui citations do not disclose "iteratively determining two or more values...where one of the values corresponds to a time-constant parameter and another of the values corresponds to a diffusive power parameter" as defined further in claim 5 (Office Action, p. 7 last ¶).

Based on Rui, the asserted rejection rationale for the remaining independent claims 10, 18, 26, and 32 relates back to rationale asserted against claim 1 and/or 5. Accordingly at least the same reasons support patentability of these claims. Notwithstanding this claim grouping in the Office Action, it should be appreciated that each of the independent claims is directed to a separately patentable invention meritorious in its own right over the art of record. The dependent claims rejected as being anticipated by Rui are patentable for at least the same reasons as their corresponding base claims. Moreover, there are additional reasons supporting patentability of many of them. Accordingly, it is respectfully submitted that the ground of rejection based on Rui should be withdrawn.

Claims 1-3, 5, 7, 9-13, 15, 18-21, 23-24, 26-29, 32 and 35 stand rejected under 35 U.S.C. §102(b) as being anticipated by USPN 6044336 to Marmarelis et al. This rejection is also traversed. In the asserted reference, "reverberation" only appears about three times and is always lumped together with other terms in the conglomerate "clutter/reverberation/noise." Much like Rui, this reference treats reverberation as a statistical error source akin to noise -- never disclosing, teaching or suggesting how a "reverberation time" might be estimated. Moreover, in regard to the rejection of independent claim 1, the cited passages fail to disclose an order statistics filter as in the case of Elko and Rui. Furthermore, in the citation against claim 5, there is no disclosure, teaching, or suggestion of "iteratively determining two or more values...where one of the values corresponds to a time-constant parameter and another of the values corresponds to a diffusive power parameter."

Based on Marmarelis, the asserted rejection rationale for the remaining independent claims 10, 18, 26, and 32 merely references the rationale asserted against claim 1 and/or 5. Accordingly at least the same reasons support patentability of these claims. Notwithstanding this claim grouping in the Office Action, it should be appreciated that the collective features of each of the independent claims are deserving of allowance over the art of record independent of one another. The dependent claims rejected as being anticipated by Marmarelis are patentable for at least the same reasons as their corresponding base claims. Moreover, there are additional reasons supporting patentability of many of them. Accordingly, it is respectfully submitted that the ground of rejection based on Marmarelis should be withdrawn.

Dependent claims 17, 25, and 31 stand rejected under 35 U.S.C. §103 as being unpatentable over Rui. The same flaws in asserting Rui under §102 also render a rejection under §103 improper. Moreover, at least the reasons supporting allowability of the corresponding base claims also support patentability of these rejected dependent claims.

In view of the forgoing, it is believed that claims 1-35 are in condition for allowance. Reconsideration of the present application is respectfully requested. The Examiner is invited to contact the undersigned by telephone to address any outstanding matters.

Respectfully submitted:



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